

## NEW HYDROPTILIDAE (TRICHOPTERA) FROM ALABAMA AND SOUTH CAROLINA<sup>1</sup>

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**ABSTRACT:** Four new species of micro-caddisflies are described from blackwater streams of Alabama and South Carolina. Two species are assigned to the genus *Oxyethira* and one each to the genera *Neotrichia* and *Hydroptila*. Each is illustrated and compared to similar species within their respective genera.

In recent years, it has become increasingly clear that the southeastern United States supports a great diversity of micro-caddisflies. This diversity is a result of a southerly range extension of largely boreal species and a northerly range extension of Central American species, as well as the occurrence of many endemic species. Most of the species of Hydroptilidae endemic to the Southeast are associated with blackwater, sandy-bottom streams of the Coastal Plain. Included are such species as *Orthotrichia curta* and *O. dentata* from Florida (Kingsolver and Ross, 1961), *Ochrotrichia provosti* from Florida (Blickle, 1961), *Hydroptila wakulla* from Florida (Denning, 1947), *H. lloganae* and *H. molsonae* from Florida (Blickle, 1961), *Oxyethira glasa* from Louisiana to South Carolina (Ross, 1941), *O. lumosa* from Florida to South Carolina (Ross, 1948), *O. novasota* from Texas to South Carolina (Ross, 1944), *O. maya* and *O. setosa* from Georgia to Florida (Denning, 1947), *O. dunbartonensis* from South Carolina (Kelley, 1981), and *O. elerobi* and *O. sininsigne* from Louisiana to South Carolina (Kelley, 1981). To these we add four new species from the same type of habitat. They belong to the genera *Neotrichia*, *Hydroptila*, and *Oxyethira*. All four species appear to be locally abundant and may be expected to be found elsewhere in the southeast.

Type specimens are deposited in the United States Museum of Natural History (USNM) at the Smithsonian Institution, Washington, DC, the Illinois Natural History Survey (INHS), and the author's personal collections (RWK;SCH).

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*Neotrichia alabamensis* n. sp.  
(Fig. 1)

In most respects, this species resembles *riegeli* Ross. It differs primarily in the inferior appendages, which are more elongate as in *falca* Ross, the three pair of processes enclosing the aedeagus, and the conformation of the spines of the aedeagus.

**Male:** Antennae 18-segmented. Length 1.8 mm. Venter VII lacking apicomesal process. Segment VIII not modified. Segment IX with elongate antero-lateral apodemes and blunt, rounded posterolateral processes. Inferior appendages proximally separated and diverging, each bearing a basal seta; bracteoles lightly sclerotized, with sinuous ventral margin. Tergum X membranous dorsally, produced ventrally into three pairs of acute processes which enclose aedeagus; bilobed processes subtending tergum. Aedeagus with two subdistal spines, one of which is strongly curved; titillator present.

**Female:** Unknown.

**Etymology:** Latin: "of Alabama."

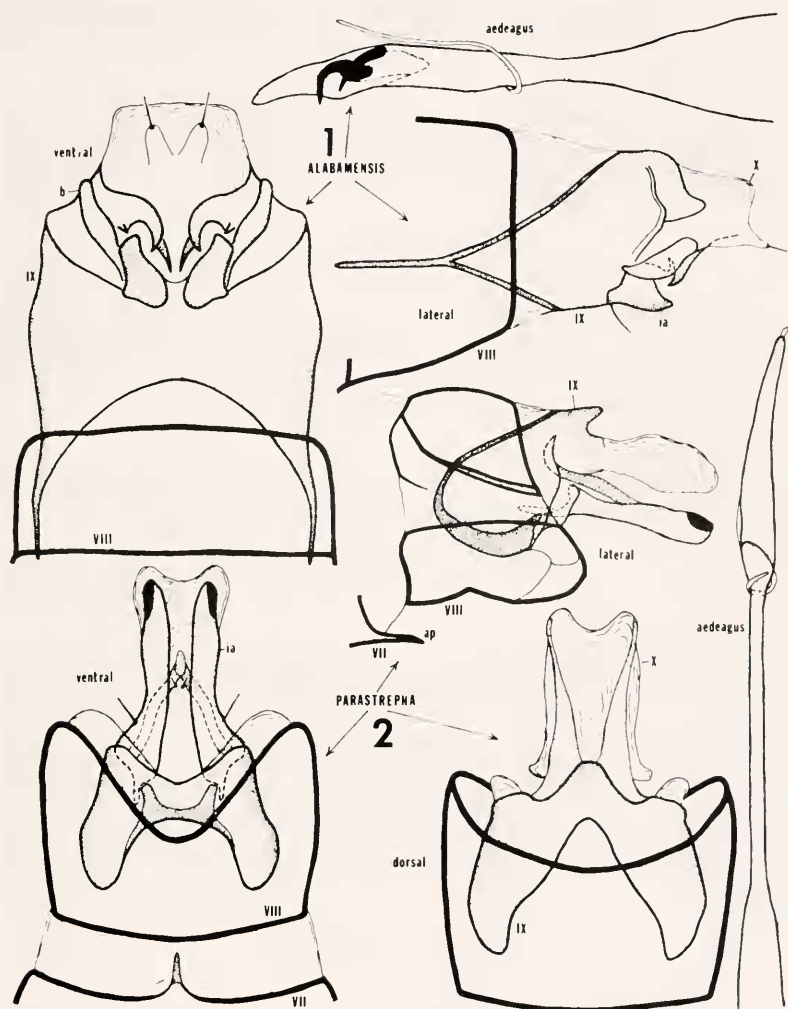
**Holotype, male:** ALABAMA, Mobile County, Indian Grave Creek near junction with Cedar Creek, 4 miles east of Citronelle, 29 Sept. 1981, Harris, O'Neil, and McCullough (USNM).

**Paratypes:** ALABAMA, Mobile County, Puppy Creek at Co. Rd. 217, 7 miles southwest of Citronelle, 25 June 1981, 1 ♂, Harris, O'Neil, and McCullough (SCH); Puppy Creek as above, but 5 Aug. 1982, 1 ♂, Harris and O'Neil (SCH); Puppy Creek as above, but 20 Sept. 1982, 1 ♂, Harris and O'Neil (SCH); Big Creek at Hwy. 63, 25 June 1982, 1 ♂, Harris and O'Neil (SCH); Cedar Creek, 6 miles east of Citronelle, 4 Aug. 1982, 1 ♂, Harris (SCH); Cedar Creek as above, 20 Sept. 1982, 2 ♂, Harris and O'Neil (SCH); Escatawpa River, 7 miles west of Citronelle, 5 Aug. 1982, 2 ♂, Harris and O'Neil (SCH); Bennett Creek, 6 miles west of Citronelle, 5 Aug. 1982, 3 ♂, Harris and O'Neil (SCH); Chickasaw Creek, 2 miles north of Oak Grove, 24 June 1982, 1 ♂, Harris and O'Neil (SCH); Baldwin County, Little River at Hwy. 59, 11 May 1982, 1 ♂, Harris (SCH); Pine Log Creek at Hwy. 59, 11 May 1982, 3 ♂, Harris (USNM); Washington County, Pond Creek at Co. Rd. 9, 13 May 1982, 1 ♂, Harris (USNM); Oklawaha Creek at Co. Rd. 9, 13 May 1982, 1 ♂, Harris (USNM); Monroe County, Little River at Little River State Park, 11 May 1982, 1 ♂, Harris (USNM); Choctaw County, Middle Tallawampa Creek at Co. Rd. 23, 16 May 1982, 4 ♂, Harris (RWK); Tallawampa Creek at Co. Rd. 23, 16 May 1982, 1 ♂, Harris (INHS); Butler County, Pigeon Creek at Hwy. 110, 4 Sept. 1982, 1 ♂, Harris (INHS); Perry County, Oakmulgee Creek at Co. Rd. 30, 15 June 1981, 1 ♂, Harris (INHS); Oakmulgee Creek at Hwy. 219, 20 Sept. 1981, 1 ♂, Harris and O'Neil (INHS); Tuscaloosa County, Tyro Creek, 4 miles southeast of Berry, 15 June 1982, 1 ♂, Harris and O'Neil (INHS); Escambia County, Little Escambia Creek at Hwy. 31, 6 Aug. 1982, 1 ♂, Harris and O'Neil (INHS).

*Hydroptila parastrepha* n. sp.  
(Fig. 2)

This species can be placed in the *consimilis* group and is closely related to *strepha* Ross. It can be distinguished from the latter on the basis of the inferior appendages which are distally broad, each bearing a darkly pigmented spot on the apex. The sclerotized plate supporting the aedeagus is distinctly pointed distally, unlike the rounded conformation in *strepha*.

**Male:** Antennae 29-segmented. Length 3.5 mm. Apicomesal process of Venter VII short. Dorsum IX with mid-dorsal projection; blunt posterolateral processes; venter deeply



Figs. 1-2. Male genitalia - Segments VII-X and aedeagus. 1, *Neotrichia alabamensis* n. sp. 2, *Hydroptila parastrepha* n. sp.

excised anteriorly with a pair of posteriorly directed apodemes articulating with inferior appendages. Inferior appendages lacking mesal connection; with narrow anterior projections; broadening distally with black spot at apex. Tergum X largely membranous with lightly sclerotized lateral bands; sclerotized lateral rods enclose aedeagus and fuse ventrad of that structure. Aedeagus with broadened distal portion from which ejaculatory duct protrudes at tip; titillator short.

Female: Unknown.

Holotype, male: ALABAMA, Mobile County, Puppy Creek at Co. Rd. 217, 7 miles southwest of Citronelle, 9 Nov. 1981, Harris (USNM).

Paratypes: Same, but 12 May 1982, 1 ♂ (SCH); Mobile County, Cedar Creek, 12 May 1982, 1 ♂, Harris (RWK).

*Oxyethira lumipollex* n. sp.

(Fig. 3)

It appears that this species is part of the *forcipata* group, being most closely related to *setosa* Denning. There are many characters which render it distinct, including the shape of segment VIII with its two lateral spines and the tapering distal process of the aedeagus.

Male: Antennae 31-segmented. Length 2.9 mm. Venter VII with apicomeres process. Segment VIII short; dorsum roundly excised; pleuron excised dorsolaterally and bearing two spines, one at innermost point of excision and another at tip of lateral finger-like process. Venter IX reaching to posterior end of segment VII; dorsum IX reduced to thin strip. Inferior appendages apparently lacking. Subgenital processes convergent, with blackened tips. Aedeagus with ventral sclerotized process tapering to a point; titillator encircling aedeagus one time.

Female: Unknown.

Etymology: Latin: "thorn-thumb."

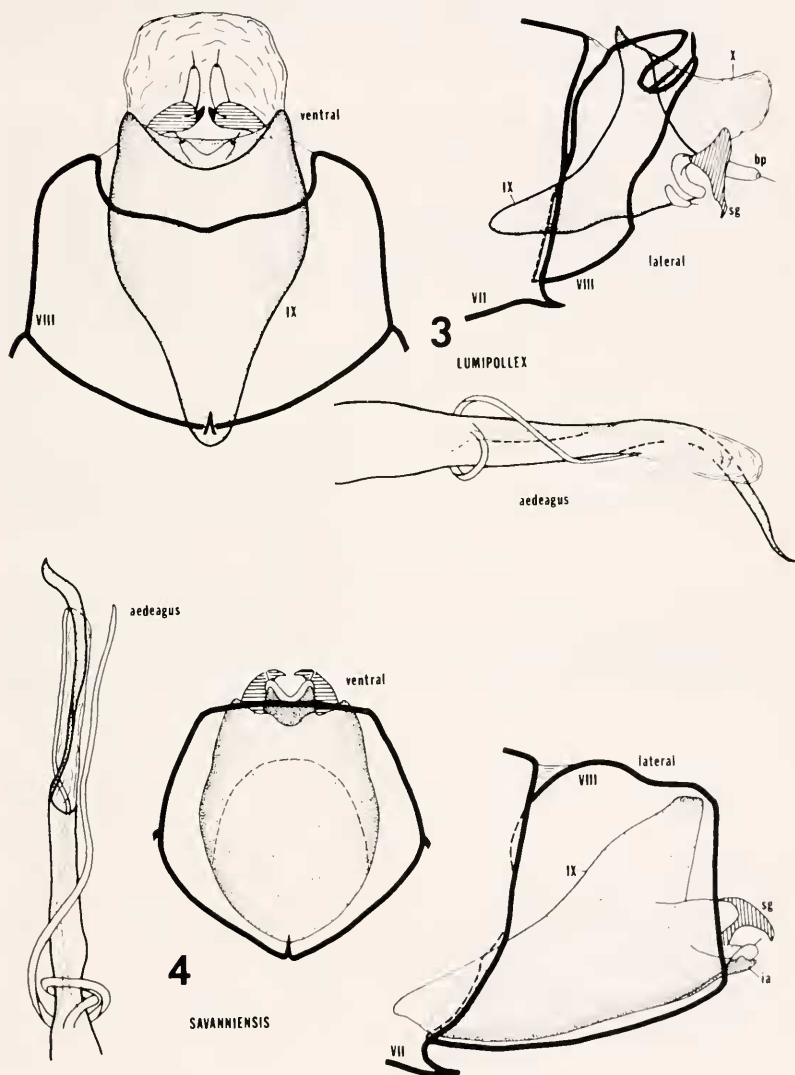
Holotype, male: ALABAMA, Mobile County, Bennett Creek, 6 miles west of Citronelle, 30 Sept. 1981, Harris, O'Neill, and McCullough (USNM).

Paratypes: Same as above, 1 ♂; same as above, but 5 Aug. 1982, 1 ♂, Harris and O'Neil (USNM); Escatawpa River, 7 miles west of Citronelle, 31 March 1982, 2 ♂, Mettee and O'Neil (RWK); Escatawpa River same as above, but 20 Sept. 1982, 1 ♂, Harris and O'Neil (INHS); Beaver Pond Branch, 1.5 miles west of Citronelle, 5 Aug. 1982, 1 ♂, Harris and O'Neil (INHS); Washington County, Bates Creek at Hwy. 43, Aug. 1982, 1 ♂, Harris and O'Neil (INHS); Choctaw County, Tallawampa Creek at Co. Rd. 23, 16 May 1982, 1 ♂, Harris (SCH); Bogueloosa Creek at Co. Hwy. 9 near Toxey, 16 May 1982, 10 ♂, Harris (SCH); Perry County, Oakmulgee Creek at Hwy. 219, 4 Apr. 1982, 1 ♂, Harris and O'Neil (SCH).

*Oxyethira savanniensis* n. sp.

(Fig. 4)

This species belongs to the *grisea* group. It is similar to *novasota* Ross, *grisea* Betten, and *rivicola* Blickle and Morse in the heavily sclerotized, M-shaped inferior appendages. However, the broad dorsum IX and complete, non-excised, posterior margin of segment VIII are reminiscent of *lumosa*. The combination of characters mentioned above along with the elongate process of the aedeagus render it distinct.



Figs. 3-4. Male genitalia - Segments VII-X and aedeagus. 3, *Oxyethira lumipollex* n. sp. 4, *Oxyethira savanniensis* n. sp.

**Male:** Antennae 29-segmented. Length 24 mm. Venter VII with apicomeres process. Segment VIII cylindrical with posterior margin complete, not excised. Inferior appendages heavily sclerotized and M-shape. Subgenital processes pointed and convergent. Aedeagus with long distal process beginning at midlength and widening distally; titillator encircling aedeagus twice.

**Female:** Unknown.

**Etymology:** Referring to the type locality in the Savannah River Basin.

**Holotype, male:** SOUTH CAROLINA, Aiken County, Savannah River Plant, Upper Three Runs Creek at SRP 8-1, 29 March 1976, Herlong and Prichard (USNM).

**Paratypes:** ALABAMA, Mobile County, Puppy Creek at Co. Rd. 217, 25 June 1982, 1 ♂, Harris and O'Neil (USNM); Puppy Creek same as above, but 12 May 1982, 4 ♂ (RWK); Puppy Creek same as above, but 20 Sept. 1982, 3 ♂, Harris (RWK); Escatawpa River, 7 miles west of Citronelle, 5 Aug. 1982, 2 ♂, Harris and O'Neil (USNM); Nobodies Creek near junction with Escatawpa River, 8.5 miles southwest of Citronelle, 13 May 1982, 4 ♂, Harris (USNM); Bennett Creek, 6 miles west of Citronelle, 20 Sept. 1982, 1 ♂, Harris (USNM); Chickasaw Creek, 2 miles north of Oak Grove, 24 June 1982, 1 ♂, Harris and O'Neil (INHS); Beaver Pond Branch, 1.5 miles west of Citronelle, 5 Aug. 1982, 1 ♂, Harris and O'Neil (INHS); Cedar Creek, 6 miles east of Citronelle, 4 Aug. 1982, 2 ♂, Harris and O'Neil (INHS); Indian Grave Creek near junction Cedar Creek, 4 Aug. 1982, 1 ♂, Harris and O'Neil (INHS); Baldwin County, Turkey Creek at Hwy. 59, 11 May 1982, 2 ♂, Harris (INHS); Farris Creek at Hwy. 59, 11 May 1982, 25 ♂, Harris (INHS); Hall Creek at Hwy. 59, 11 May 1982, 5 ♂, Harris (SCH); Washington County, Okwakee Creek at Co. Rd. 9, 13 May 1982, 3 ♂, Harris (SCH); Bates Creek at Hwy. 43, 4 Aug. 1982, 2 ♂, Harris and O'Neil (SCH); Escambia County, Blackwater Creek at Co. Rd. 4, 12 June 1982, 1 ♂, Harris (SCH).

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